

Application No.: 09/922,092

Docket No.: JCLA6561-R

REMARKS**Present Status of the Application**

The Office Action rejected claims 1-8. Specifically, the Office Action objected claim 1-6 due to typographic error. The Office Action rejected claims 1, 2, 5, and 6 under 35 U. S. C. 102(e) as being anticipated by Christiansen et al. (U. S. Patent 5,983,302; hereinafter Christiansen). In addition, the Office Action rejected claims 3, 4, and 7 as being unpatentable over Christiansen in view of Bennett (U. S. Patent 6,679,904). The Office Action also rejected claim 8 under 35 U.S.C. 103(a) as being unpatentable over Christian in view of Bennett and further in view of Rossum (U. S. Patent 6,622,207). Claims 1-8 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Claim Rejections under 35 USC 102

The Office Action rejected claims 1, 2, 5, and 6 under 35 U. S. C. 102(e) as being anticipated by Christiansen. Applicant respectfully traverses the rejections for at least the reasons set forth below.

1. With respect to claim 1, the present invention is directed to a method of bus priority arbitration driven by data used in a bus system. The bus system comprises a bus and a plurality of masters connected to the bus. Each master can output a request for a grant to use the bus. In order to have better efficiency, the present invention responds to the request of each master according to a predefined orderly rotation. Then, the response to the requests of the master stops according to the predefined orderly rotation when a data for one of the masters is ready.

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More specifically, the master, which is ready in preparing data and wait for the grant to use the bus, is attributed a highest priority to access the bus. In other words, the present invention does not treat the master by equal priority but in a specific cycle priority, and only when any master one is ready in preparing data, this specific master is assigned with the highest priority for accessing the bus.

2. In re Christiansen, Christiansen at failed to disclose the features recited in independent claim 1 as follows:

The Office Action refers to "col. 5, lines 34-56" of Christiansen for the features as recited in the step for treating all the masters as a group. Applicant respectfully disagrees.

Christiansen states:

According to the exemplary embodiment illustrated in FIG. 2, the arbiter 22 is responsive to a first signal from each of the plurality of devices of first priority and to a second signal from the at least one device of second priority to arbitrate control of the system bus. The arbiter 22 is, in an exemplary embodiment, connected to each of the bus master devices by the request line 28 and by a grant line 30. Those skilled in the art will appreciate that a single bi-directional line can alternately be used, if desired, for the request and grant signals. According an exemplary embodiment of the present invention, the bus master devices of first priority can request control of the system bus by asserting their request lines 28. If the arbiter grants the request, the arbiter sends a grant signal to the requesting bus master device. In order to ensure that all of the bus master devices of first lower priority have an equal opportunity to use the bus, the arbiter uses an equal access arbitration scheme. For example, a round robin arbitration scheme which awards system bus control to each of any user-specified bus master devices of first priority in a fixed, sequential order, can be used as an equal access arbitration scheme. Alternately, any arbitration scheme which ensures equal access among the bus master devices, such as token ring protocol, can be used as well (*Emphasis added*).

Clearly, Christiansen has arranged the master device in two groups with the first priority and the second priority. The equal priority scheme is assigned to the first lower priority (that is

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second priority).

Therefore, Christiansen failed to disclose the features as recited in independent claims.

3. Further, with respect to the steps of "stopping a response" and "attributing highest priority...", the Office Action has referred to "col. 6, lines 27-37". However, Applicant respectfully disagrees. Christiansen states as follows:

In addition to the request line 28 and the grant line 30, the bus master device of second priority also has an arbitration critical line 32 (labelled ARBcrit in FIG. 2) connected to the arbiter 22. In an exemplary embodiment, *when the bus master device of second priority wants control of or access to the system bus*, the bus master device of second priority asserts its request line as well as the ARBcrit line. Upon receiving the request and ARBcrit signals, the arbiter then grants control of the bus to the bus master device of second priority without regard to the equal access arbitration scheme (*Emphasis added*).

It should be noted that Christiansen only discloses "*when the bus master device of second priority wants to control of or access to the system, the bus master device of second priority can assert its request*". This does not mean that the data has been prepared in ready for this bus master, when this bus master wants to access the system. In this situation, the bus is occupied even during the period for preparing the data in this bus master having asserted the request. The bus is wasted in this situation, based on Christiansen. *This situation of Christiansen would not occur in the present invention.*

4. For at least the foregoing reasons, independent claim 1 and the dependent claims 2, 5 and 6 should be allowable.

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Discussion of Claim Rejections under 35 USC 103

The Office Action rejected claims 3, 4, and 7 as being unpatentable over Christiansen in view of Bennett. The Office Action rejected claim 8 under 35 U.S.C. 103(a) as being unpatentable over Christian in view of Bennett and further in view of Rossum. Applicant respectfully traverses the rejections for at least the reasons set forth below.

1. With respect to independent claims 3 and 4, for at least the same foregoing reasons applied to independent claim 1, claims 3 and 4 are not disclosed even if Bennett is in combination. Bennett discloses the round robin bur arbitrator, which is operated under the equal priority (see col. 5, lines 50-51 in Christiansen). However, *the present invention is not operated in equal priority.*

2. With respect to independent claim 7, for at least the same foregoing reasons applied to independent claim 1, independent claim 7 is not disclosed even if Bennett is in combination. Bennett discloses the round robin bur arbitrator, which is operated under the equal priority as discussed above. The present invention is not in equal priority in the group.

3. With respect to dependent claim 8, Rossum is further cited in combination with Christiansen and Bennett. However, Rossum does not supply the missing features in Christiansen and Bennett. For at least the same foregoing reasons applied to independent claim 7, features recited in dependent claim 8 is not disclosed by the prior art references.

For at least the foregoing reasons, Applicant respectfully submits that independent claims 1 and 7 patently define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 2-6 and 8 patently define over the prior art references as well.

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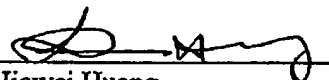
CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 1-8 of the invention patentably define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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